6. OPERATION AND MAINTENANCE

6.1 General

Lehigh will develop an Operation and Maintenance (O&M) Plan in accordance with WAC 173-340-400(4)(c) that includes:

- Contact names and phone numbers of responsible individuals;
- Process description and operating principles;
- Design criteria and operating parameters and limits;
- General operating procedures;
- Detailed discussion of treatment unit operation;
- Maintenance and sampling forms;
- Spare part inventory, ordering procedures, warranties, and catalogues;
- Equipment maintenance schedules, including manufacturer recommendations;
- Contingency procedures for spills, releases, and personnel accidents; and
- Procedures for long-term maintenance of the facility.

The remainder of this section provides a general description of anticipated operation and maintenance activities.

6.2 Procedures

The treatment system will generally be controlled automatically using an on-site programmable logic controller (PLC). The PLC will be connected to a personal computer (PC) interface with the software and hardware to facilitate on-site or remote supervisory control and data acquisition (SCADA). O&M activities will be implemented remotely using the SCADA system. Remote O&M activities include:

- Review operating data on regular intervals;
- Download operating data on regular intervals;
- Adjust operating parameters such as carbon dioxide pressures and open or close carbon dioxide valves as needed; and
- Disable the treatment system if needed.

On-site O&M activities involve the physical operation, maintenance, and monitoring of Closed CKD Pile waste containment systems, Groundwater Remedy components, and compliance monitoring components. O&M of the Closed CKD Pile waste containment systems is described in the Post-Closure Care and Maintenance Plan [D&M, 1995]. The O&M Plan will describe the O&M of Groundwater Remedy systems and compliance monitoring components. On-site gravity drain operation and maintenance includes:

- Monitoring and recording flow measurement readings;
- Monitoring the discharge point for sediment and clogging;
- Periodically manipulating valves and other moving parts to limit the potential for sticking; and
- Periodically rehabilitating the drain if impeded flow is suspected.

On-site carbon dioxide tank operation and maintenance includes:

- Fill the carbon dioxide tanks with liquid carbon dioxide after the low carbon dioxide level warning alarm, but before the tank is empty;
- Implement procedures described in the manufacturer's maintenance manual for O&M of the pressure vessel, air conditioner, vaporizer, and vapor heater; and
- Document tank gauge readings (e.g., pressure, mass of contents, outlet pressure, etc.).

On-site carbon dioxide treatment system operation and maintenance includes:

- Visual and auditory leak detection monitoring;
- Adjusting valves and regulators as needed to fine-tune carbon dioxide dosage;
- Periodically manipulating valves and other moving parts to limit the potential for sticking;
- Replacing silicone tubing if it is punctured or degraded;
- Maintaining and replacing carbon dioxide distribution systems when needed; and
- Calibrating, maintaining, and replacing pH probes and monitors.